AMENDMENTS TO THE CLAIMS

Please replace the claims with the following rewritten listing:

1 – 22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Currently Amended) Sensor device for non-contact detection of conditions of a surface, the sensor device comprising:

a light source for emitting light towards the surface;

a first detector arranged for receiving a portion of said emitted light when reflected from said surface and producing a first output according to an intensity thereof;

a second detector arranged for receiving a portion of said emitted light when reflected from said surface and for producing a second output according to the intensity thereof; and

control means for receiving and evaluating the received output from the detectors based on an amount of diffuse reflected and mirror reflected light;

~~wherein the light source is arranged to emit light in a direction within 20° from the surface normal~~, the sensor device further comprising:

a first linear polarization filter arranged in a path of the light from the light source and to the surface for the polarization of the emitted light; and

a second linear polarization filter arranged in a path of the light between said surface and one of the first detector and the second detector.

27. (Previously Presented) Sensor device according to claim 26, wherein the light source is arranged to emit light in a direction within 10° from the surface normal.

28. (Previously Presented) Sensor device according to claim 26, wherein a direction of polarization of the second filter is parallel to a direction of polarization of the first filter.

29. (Previously Presented) Sensor device according to claim 28, further comprising a third polarization filter arranged in the path of the light between said surface and the other one of the first detector and the second detector, wherein a direction of polarization of the third filter is perpendicular to the direction of polarization of the first and the second filter.

30. (Previously Presented) Sensor device according to claim 28, wherein the first and second filter are constituted by one linear polarization filter and a beam splitter is arranged between the first polarization filter and the light source for the diversion of a portion of the light reflected from the surface into said detector.

31. (Previously Presented) Sensor device according to claim 26, further comprising a first beam splitter arranged in the path of the light from the first linear polarization filter and to the surface for diversion of a portion of the light reflected from the surface into a second path, and a second beam splitter arranged in the second path for diversion of a portion of the light in the second path into the first detector and the transmission of a portion of the light in the second path into the second detector.

32. (Previously Presented) Sensor device according to claim 26, further comprising a reference light source arranged to emit light substantially in the direction and path of the first light source, wherein the reference light source emits light of a wavelength on which said polarization filters of the device have substantially no effect, so that detection of the light from the reference light source by the first and second detector may be used for verification of a functioning of the system.

33. (Previously Presented) Sensor device according to claim 26, further comprising a further light source for emitting light within an infrared wavelength range of high

absorbance by water towards the surface and an absorption detector for receiving a reflection of said emitted light and producing an output to the control means accordingly.

34. (Previously Presented) Sensor device according to claim 33, wherein said further light source emits light within the wavelength range of 930 nm to 970 nm.

35. (Previously Presented) Sensor device according to claim 26, further comprising a light source for emitting light towards the surface, a path of the light having an angle in the range of 15° to 70° to the surface normal and a retro-reflection detector arranged for receiving a retro-reflection of said emitted light in said path and producing an output to the control means accordingly.

36. (Previously Presented) Sensor device according to claim 26, further comprising a light source for emitting polychromatic light towards the surface and at least two range detectors arranged to detect each a wavelength range of a reflection of said emitted light and producing an output to the control means accordingly.

37. (Previously Presented) Sensor device according to claim 36, further comprising at least three of said range detectors arranged for detecting each a wavelength range of the reflection of said emitted light and producing an output to the control means accordingly.

38. (Previously Presented) Sensor device according to claim 36, wherein said wavelength ranges each comprise a range within the visible wavelength range.

39. (Previously Presented) Sensor device according to claim 26, wherein the device is mounted in a vehicle, the device further comprising a noise sensor for receiving noise from the vehicle traveling along a road and producing an output to the control means accordingly.

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Previously Presented) A road surface property detection device to be mounted on a vehicle comprising a sensor device according to claim 26 for contact-less detection of surface properties of a road surface and providing an output accordingly, comprising:

a radiation emitter directed towards the road surface and at least one detector for detecting the radiation reflected from the road surface and providing an output accordingly; and

at least one detector comprising a shutter device for allowing a temporal access of radiation to the detector for a period of 1/10 to 1/50,000 seconds.

44. (Previously Presented) Sensor device for non-contact detection of conditions of a surface, the system comprising:

a light source for emitting light towards the surface;

a first detector arranged for receiving a portion of said emitted light when reflected from said surface and producing a first output according to an intensity thereof; a second detector arranged for receiving a portion of said emitted light when reflected from said surface and producing a second output according to an intensity thereof; and

control means for receiving and evaluating the received output from the detectors based on an amount of diffuse reflected and mirror reflected light,

one or more arrangements for detecting conditions of the surface, said arrangements comprising at least one of:

an infrared light source for emitting light within a wavelength range of 930 nm to 970 nm towards the surface and an absorption detector for receiving a reflection of said emitted infrared light and producing an output to the control means accordingly, and

a light source for emitting light towards the surface, a path of the light having an angle in a range of 15° to 70° to the surface normal and a retro-reflection detector arranged for receiving a retro-reflection of said emitted light in said path and producing an output to the control means accordingly,

a light source for emitting polychromatic light towards the surface and at least two range detectors arranged to detect each a wavelength range of a reflection of said emitted light and producing an output to the control means accordingly, and

a noise sensor for receiving noise from a vehicle traveling along a road and producing an output to the control means accordingly, on which vehicle the device is arranged.

45. (Cancelled)

46. (Cancelled)

47. (Previously Presented) Sensor device for non-contact detection of conditions of a road surface, the sensor device comprising:

a light source for emitting light towards the surface;

a first detector arranged for receiving a portion of said emitted light when reflected from said surface and producing a first output according to an intensity thereof;

a second detector arranged for receiving a portion of said emitted light when reflected from said surface and producing a second output according to the intensity thereof;

control means for receiving and evaluating the received output from the detectors based on an amount of diffuse reflected and mirror reflected light,

a first linear polarization filter arranged in a path of the light from the light source and to the surface for the polarization of the emitted light;

a second linear polarization filter arranged in a path of the light between said surface and one of the first detector and the second detector; and

a further light source for emitting light within an infrared wavelength range of high absorbance by water towards the surface and an absorption detector for receiving a reflection of said emitted light and producing an output to the control means accordingly.

48. (Previously Presented) Sensor device according to claim 47, wherein said further light source emits light within the wavelength range of 930 nm to 970 nm.

49. (Previously Presented) Sensor device according to claim 47, wherein the light source is arranged to emit light in a direction within 20° from the surface normal.

50. (Previously Presented) A road surface property detection device for mounting in a vehicle comprising a sensor device according to claim 26 the road surface property detection device further comprising:

transmission means for receiving an output from the sensor device and conducting a wireless transmission of road surface property data based thereon to a receiver exterior to the vehicle;

wireless receiver means adapted to receive radio transmissions of data from transmission means of devices similar to the detection device itself; and

data output means for receiving an input from the receiver means and presenting an output perceivable by a driver of the vehicle based thereon.

51. (Previously Presented) A device according to claim 50, further comprising position means for generating position data for estimation of a current position of the device, wherein the transmission means is arranged to transmit said position data.

52. (Previously Presented) A device according to claim 50, wherein the data output means is further arranged for receiving an input from the first or second detector and presenting an output perceivable by the driver of the vehicle based thereon.

53. (Previously Presented) A road surface property detection device according to claim 50, further comprising:

a radiation emitter directed towards a road surface and at least one detector for detecting radiation reflected from the road surface and providing an output accordingly; and

washing means for the radiation emitter and at least one detector for recurrently flushing thereof.

54. (Previously Presented) A device according to claim 53, wherein said washing means is connected to and operates concurrently with a windshield washer system of the vehicle.

55. (Previously Presented) A system comprising:

a plurality of devices according to claim 50 each of said plurality of devices being mounted in a separate vehicle; and

a plurality of stationary detector means for contact-less detection of surface properties of a road surface and for providing an output accordingly to transmission means for receiving said output and conducting a wireless transmission of road surface property data based thereon to receivers of said devices.

56. (Previously Presented) A system according to claim 55, comprising a plurality of stationary information arrangements having receiver means adapted to receive radio transmission data from the devices mounted in the vehicles as well as the stationary detector means, and comprising visual communication devices arranged along roads for distributing information to drivers of vehicles on said roads based on said received road surface property data.

57. (Previously Presented) A sensor device according to claim 26, wherein the control means are arranged to evaluate the received output from the detectors for detecting the presence of snow, ice, or water from the output of said first detector and said second detector.